



July 2, 2010

The Honorable Steven Chu
Secretary of Energy
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

The Honorable Lisa P. Jackson
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Secretary Chu and Administrator Jackson,

The Great Plains Institute (GPI) commends the Obama administration for creating an Interagency Task Force on Carbon Capture and Storage (CCS) to accelerate the deployment of CCS technologies and for establishing near-term deployment goals of bringing online 5 to 10 commercial demonstration projects by 2016 in the U.S. GPI is a Midwest-based, non-partisan non-profit corporation that brings together key public and private leaders to accelerate the transition to a renewable and low-carbon energy system by mid-century.

GPI has been involved in important efforts at the state and regional level to facilitate initiatives of public, private and nongovernmental stakeholders¹ that have developed recommendations to transition the Midwestern coal fleet to CCS by 2050, including near-term deployment goals. As you know, leadership and support at the state, regional, and federal level will be critical to meet near and long-term commercial CCS deployment goals.

We urge you to support the key research, demonstration and, above all, commercial deployment of already proven CCS technologies; development of a legal and regulatory framework for CCS, financial incentives and other vital mechanisms that will stimulate CCS projects and foster a stable environment for CCS technology deployment at a commercial scale.

The Midwest is strategically positioned to be a leader in commercial CCS deployment with significant coal and biomass resources and extensive geological formations that are likely suitable for storage – both saline formations and depleted oil and gas fields. There are several fully commercial projects in various stages of development in the Midwest that can move the United States towards achievement of its near-term goals. Indeed, the Midwest has the largest cluster of potential commercial-scale capture projects in the U.S. that could be served by a common Midwest to Gulf Coast CO₂ pipeline. This underscores the importance of the Midwest in achieving the urgent national priority of system-wide deployment of commercially proven CCS technologies.

Some of these commercial projects have secured off-take agreements with a pipeline/enhanced oil recovery (EOR) company (Denbury Resources) that would build an inter-jurisdictional CO₂ pipeline from the Midwest to the Gulf Coast region. This pipeline would carry CO₂ from Midwestern coal power plants, coal-based energy facilities and perhaps biofuels plants to the Gulf Coast region for EOR and for geologic storage of CO₂, thus enhancing domestic energy security and supporting commercial deployment of CCS projects. Economic analysis completed by Northern Illinois University for Denbury Resources concluded that the construction of the Midwest-to-Gulf Coast pipeline will support job creation and increase the wealth of the region impacted by the pipeline.²

It is urgent that the federal government further identify ways to expand its activities beyond CCS research and development and rapidly enable these commercial projects to move forward, lest they collapse amidst the current

¹ Most recently, GPI has provided staffing to the Midwestern Governors Association Energy Initiatives. Information on the MGA Energy Initiatives, including work products on CCS can be found at the following link: <http://www.midwesterngovernors.org/energy.htm>.

² Northern Illinois University (NIU), Regional Development Institute (RDI) (Oct. 30th, 2009). "The Economic Impacts of a Midwest CO₂ Pipeline," prepared by John Lewis and Lisa Bergeron of the RDI at NIU under agreement with Denbury Resources, Inc.

financial and public policy uncertainty. This will require immediate and focused cooperation and collaboration with states to enable key policy development and rapidly providing sufficient levels of financial support (incentives and/or risk mitigation) to move these projects across the finish line.

If such federal support can be brought to bear faster, successful deployment of these projects as a Midwestern cluster around a common CO₂ pipeline infrastructure will stimulate development of other commercial projects and move the U.S. towards large-scale CO₂ management that supports environmental stewardship, maintains and creates jobs, enhances domestic energy security, and provides valuable experience for further advancement of CCS technologies that are not yet commercially proven.

In general, GPI calls on the Interagency Task Force on CCS to:

- Develop and/or implement policies and programs that will provide incentives for CCS project development and promote a stable environment for the widespread, commercial scale application of CCS technologies, from power plants to ethanol facilities.
- Support technology research, demonstration and deployment at levels that are sufficient to stimulate project development and deployment in the near-term. This includes identifying mechanisms to support projects currently under development that can move forward now, given sufficient support. Examples of federal financial support include:
 - Ensure that tax credits are, in general, large enough to stimulate project development; and specifically provide that projects are eligible for both the 48A and 45Q tax credits.
 - Ensure that sequestration tax credits are large enough to stimulate project development; are self executing; transferable; and able to provide enough certainty to facilitate project finance.
 - Increase the pool for federal loan guarantees and streamline the loan guarantee process.
 - Allow projects that co-process coal and sustainable biomass in order to co-produce synthetic fuels along with electricity to be eligible for tax credits and other financial support mechanisms *if* such projects attain at least a 50 percent reduction in net GHG emissions on a fuel cycle-wide basis relative to the conventional fossil fuel products displaced.
- Prioritize federal partnerships with states in addition to financial and risk mitigation incentives to get CO₂ pipeline infrastructure built, especially in regions such as the Midwest where viable commercial capture projects currently depend on a CO₂ outlet to secure financing and move to construction and operations.

The Interagency Task Force should structure incentives and other financial support mechanisms in ways that stimulate deployment of technologies that provide commercial experience with capture, transport, and storage of CO₂ while achieving the greatest level of greenhouse gas reduction GHG per federal dollar spent.

Specifically, GPI calls on the Interagency Task Force on CCS to support coal and biomass co-processing with CCS for the co-production of ultra-low carbon electricity and liquid fuels.

A technology pathway is commercially available today for simultaneous production of electricity and transportation fuels with very low and even net-zero GHG emissions from entirely domestic energy resources. Integrating CCS with the co-processing of coal and biomass to co-produce synthetic gasoline and diesel together

with electricity—or coal + biomass to liquids and electricity (or CBTLE)—presents a technology pathway for producing low or net-zero carbon energy. CBTLE+CCS technologies can be deployed to repower aging conventional coal-fired power plants that are responsible for the highest rates of CO₂, sulphur, mercury, and other emissions. Support for CBTLE+CCS projects through eligibility for federal financial mechanisms (e.g., through tax incentives, special funding programs, etc.) will facilitate deployment of technologies that can provide a low-cost, low-carbon source of electricity and transportation fuels while using abundant domestic energy resources.

The following legislative concepts could be integrated into legislation that supports commercial demonstration and deployment of CCS technologies. These proposed concepts emphasize support for projects that achieve the highest reduction in net emissions, at the lowest cost, while increasing energy security through use of domestic resources (i.e., coal and biomass):

- CCS incentives and other policy mechanisms for both early mover projects and routine deployment should be designed to allow for options that co-produce synthetic fuels along with electricity, as well as systems that co-process sustainable biomass with fossil fuels, *if* such projects attain at least a 50 percent reduction in net GHG emissions on a fuel cycle-wide basis relative to the conventional fossil fuel products displaced.
- Structure incentives and other policy mechanisms to reward those projects that offer greater net avoided GHG emissions on a fuel cycle-wide basis or lower cost per tonne of GHG emissions avoided vs. solely rewarding those projects that store more CO₂ or capture higher percentages of CO₂—without necessarily achieving greater net emission reductions. Specifically:
 - Provide an additional option for determining level of financial reward for projects achieving greater reductions in emissions based on a fuel cycle-wide average vs. solely basing reward on higher capture and storage rates.
 - Use a single index for measuring GHG mitigation as the basis for awarding incentives. Each level of GHG emission mitigation would be tied to incentives similar to the existing language for levels of capture and storage. (see GHG index developed by Robert Williams, Princeton University³ as presented in June 2010)
- Incentives and other policy mechanisms should be via a mechanism that preferentially awards projects that achieve the greatest net reductions in GHG emissions and maximize learning per federal \$ spent (because of federal deficit concerns), for example, via reverse auctions.

The Great Plains Institute takes a “portfolio approach” to the twin challenges of energy security and climate stewardship. We are working hard with hundreds of partners to bring to scale “best in class” energy efficiency strategies, foster robust renewable energy development, resolve multi-state transmission cost-allocation issues, foster a coherent approach to a smarter grid, and more. But **all these efforts will be for naught without a clear and cost-effective transition strategy for coal.**

Despite much policy-maker and media discussion to the contrary, CCS is ready to deploy today with particular feedstocks using specific technologies and storing the CO₂ in certain types of formations. Just deploying CCS in those instances alone where it is already commercially proven would be a huge step forward and presents a national challenge and priority well worth accomplishing. This is why we strongly support efforts to accelerate commercial deployment of CCS technologies as a key part of a portfolio of low-carbon technology options. The federal government, along with state governments and regional entities, has the opportunity to stimulate deployment of CCS technologies and build-out of infrastructure that will provide a pathway for transitioning to a

³ See presentation by Robert Williams, Princeton University to the IEA-MOST Workshop on Fossil Fuel Technologies Beijing, China 10 June 2010. Presentation available at the following: <http://www.iea.org/work/2010/most/williams.pdf>

low-carbon economy while drawing on domestic resources and increasing our energy security. The federal government can play a vital role in ensuring that commercial CCS projects and associated pipeline infrastructure are built in the near-term. Thank you for your attention to the critical issue of accelerating CCS deployment.

Sincerely,

Rolf Nordstrom

A handwritten signature in black ink, appearing to read 'Rolf Nordstrom', with a stylized, cursive script.

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Cc: Nancy Sutley, Chair, White House Council on Environmental Quality